R-2216

FEASIBILITY STUDY

NC 55
From Bridgeton to Alliance
Craven-Pamlico Counties
R-2216

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

August, 1987

FEASIBILITY STUDY

NC 55
From Bridgeton to Alliance
Craven-Pamlico Counties
R-2216

General Description

This project is included in the 1987-1995 Transportation Improvement Program for a feasibility study and/or right of way protection. The following report summarizes the findings of a preliminary study to determine appropriate improvements to the 11.8-mile segment of NC 55 from US 17 in Bridgeton to SR 1348 in Alliance (see attached figure).

Existing Facility

NC 55 is classified as a Rural Major Collector in the North Carolina Functional Classification System. The existing highway was constructed on the present alignment in the 1920's and widened to the present width in the 1950's. Since that time, no improvements other than resurfacing have been made. The claimed right of way width along the project is 100 feet. The existing two-lane highway consists of a 22-foot pavement and 10-foot shoulders. The concrete pavement overlaid with asphalt is in poor condition and is rutted in the wheel paths. This segment of NC 55 was last resurfaced in 1975.

The project area is primarily rural in character with residential and commercial development intermixed. Heavier commercial development has occurred at Reelsboro and Grantsboro. At these two locations 35-mph speed limits have been posted. With the exception of a 45-mph speed zone near US 17, the remainder of the project has a posted speed limit of 55 mph. Traffic signals exist only at the US 17 intersection. Approximately 69% of the project has unrestricted passing sight distance greater than 1500 feet. NC 55 is a two-lane facility both west of the project toward New Bern and east of the project toward Bayboro.

Accident rates (per 100 million vehicle miles) along NC 55 from January 1984 to January 1987 are summarized below:

	NC 55 From Bridgeton to Alliance	Statewide average for similar rural routes (1986)
Total	174.6	197.7
Fatal accidents	2.6	3.5
Non-fatal accidents	92.4	94.5
Night accidents	40.1	62.9
Wet accidents	41.9	42.7

These figures indicate the accident rates along the project are slightly lower than the Statewide rate for rural "NC" routes. Twenty-seven percent of the accidents involved vehicles running off the road. Twenty-eight percent of the accidents involved rear-end collisions. Numerous accidents have occurred at the SR 1600 and NC 306 intersections.

Present traffic volumes (1987) range from 10,500 vehicles per day (vpd) at the west project terminal to 6000 vpd at the east project terminal. Traffic volumes at these two locations for the year 2007 are estimated at 24,300 and 10,800 vpd, respectively. A capacity analysis of the project indicates the existing highway currently operates at Level-of-Service D near the west project terminal and at Level-of-Service C near the east terminal during peak traffic periods. Based upon the above traffic projections, it is anticipated the existing facility will operate at Levels-of-Service E and D, respectively, at these two locations in twenty years.

Recommended Improvements

It is recommended the existing pavement be widened to 28 feet to provide two 12-foot travel lanes and 2-foot paved shoulders. The existing pavement should be milled and resurfaced as part of the project. Left-turn lanes are desirable at the SR 1600 intersection east of Bridgeton and at the NC 306 intersection west of Alliance. Other recommended improvements are channelization at the NC 306 intersection, replacing the raised reflectorized pavement markers along the project, and guardrail installation at the three bridges along the project. The total estimated cost of these improvements is $3,450,000. It is anticipated the existing right of way will be sufficient to accommodate these improvements.

Planned Improvements

Division 2 personnel indicated there are tentative plans to upgrade the subject portion of NC 55 this (1987) summer. Possible improvements include constructing left-turn lanes and channelization at the NC 306 intersection. Resurfacing would also be performed. These improvements would slightly lessen the cost of the subject project.

Drainage Structures

Three bridges are located along the project and are described below. None of these structures is scheduled for improvement in the 1987-1995 Transportation Improvement Program.

Bridge No.	Water Course	Length (ft.)	Clear Roadway Width (ft.)	Estimated Remaining Life (Yrs.)	Sufficiency Rating
65	Upper Broad Creek	213	26	16	67.0
19	Deep Run Creek	70	26	9	57.4
32	Goose Creek	106	26	9	66.8

It is recommended Bridge No. 65 be upgraded and widened. The two remaining bridges were constructed on timber piles; therefore, replacement with bridges with greater clear roadway widths is recommended. The cost of these bridge improvements (approximately $600,000) is included in the total project cost shown above.

Anticipated Environmental Impacts

No major environmental impacts are anticipated. In general, the existing right of way is sufficient to accommodate the recommended improvements. No residences or businesses will be relocated. Noise levels may increase slightly as a result of the project. It is likely wetlands are present where the highway crosses drainage courses. However, wetland takings resulting from this project will be minor.

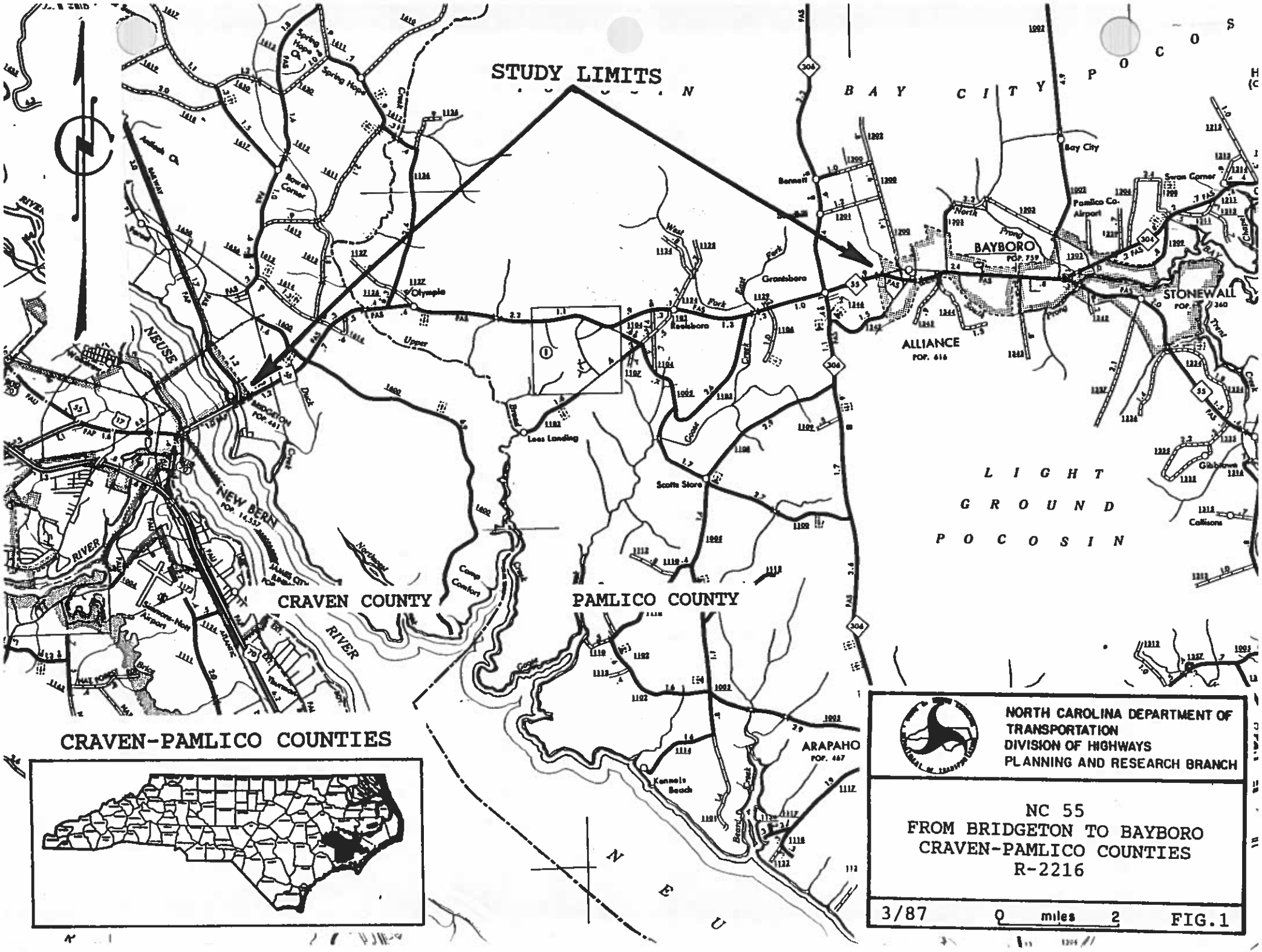
Alternatives

Present and projected traffic volumes along NC 55 warrant a multilane facility, especially within the western portion of the project toward Bridgeton. Recent preliminary studies have addressed the need to replace the existing two-lane US 17/NC 55 bridge over the Neuse River (located just west of the project) with a new four-lane structure. However, such improvements are not included in the current Transportation Improvement Program. If a new four-lane bridge is constructed, consideration should be given to widening NC 55 east of Bridgeton to a multilane facility.

Basis of Study

Field investigation and correspondence with the office of the Division Engineer served as the basis for the improvements recommended in this report. The Roadway Design and Design Services Units provided the construction cost estimates.

JWS/wp



CRAVEN-PAMLICO COUNTIES

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

NC 55
FROM BRIDGETON TO BAYBORO
CRAVEN-PAMLICO COUNTIES
R-2216

3/87 0 miles 2 FIG.1